

6635
part 1 of 4

GEOLOGICAL SURVEY

NORMA CLAIM #207

SIMILKAMEEN M.D. B.C.

10 UNITS

120-50 SE 1-11-77 : 8-12-77
92H-7E

Alfred R. Allen, P.Eng.

MINERAL RESOURCES BRANCH ASSESSMENT REPORT NO. <u>6635</u> MAP NO. <u>PART 1 of 4</u>
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For:

GILFORD RESOURCES LTD.

302-750 West Pender
Vancouver, B.C.

By:

ALLEN GEOLOGICAL ENGINEERING LIMITED

203-2025 Bellevue
West Vancouver, B.C. V7V 1B9

December 31, 1977.

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ACCGUNTS:

 A. Total Personnel: Dates worked, man days.....14.

 B. Subject Survey Costs: Personnel, rates/day
 All field & Office.....15.

MAPS:

1. Location
2. Property
3. Geology and Topography

* * * * *

INTRODUCTION (A)

The Norma property is 24 kilometres south of Princeton on Highway #3 between Friday and Deep Gulch Creeks at $49^{\circ}-18'$ latitude and $120^{\circ}-34'$ longitude.

Mr. J.W. Galagher staked the area in 1952. It was subsequently held by Deep Gulch Mines and Oro Mines. Gilford Resources Ltd. acquired the Norma claim from J. Turner, locator, in early 1977.

The east boundary of the property is just west of the exposed Copper Mountain igneous complex. The north three-fifths of the claim is underlain by Nicola andesitic rocks and the remainder by Princeton volcanics. Faulted and silicified rocks exposed by trenches near the east boundary contain pyrite with some pyrrhotite and chalcopyrite.

Geological, topographic, geochemical, magnetometer and electromagnetic surveys were conducted over a surveyed grid covering the 250 hectare property by Allen Geological Engineering Ltd., from November 1 - December 8, 1977.

Over 26.5 line kilometres 268 soil samples were taken and assayed for copper. Two hundred and fifty altimeter, 363 magnetometer and 400 VLF-EM observations were recorded. Geological traverses included roads and all grid lines.



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INDEX
PROPERTY MAP

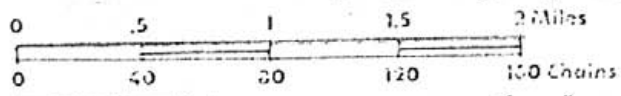
NORMA 1-10 207 (4)

No. 2

31/12/77

Allen Geological Engineering Ltd.

Per Alfred R. Allen P. Eng.



SCALE

Sunday Cr. 49°-15' 92 H-7E

GEOLOGICAL SURVEY

NORMA CLAIM

1-11-77 : 8-12-77

INTRODUCTION

The geology of the Norma Claim was mapped by the writer, assisted by T. Thomas and R. Thomas, November - December 1977.

The work was facilitated by a surveyed grid which had been established over the property. In addition the roads were traversed, and where necessary, short traverses were made between and across the grid lines.

The elevations of grid stations were recorded and the topography mapped. The geology was re-checked during the course of geochemical and geophysical surveys.

LOCATION AND ACCESSIBILITY

The Norma claim is located 24 kilometres southerly from Princeton, B.C., on the west side of Highway #3, between Friday and Deep Gulch Creeks.

This is $120^{\circ}-34'$ west longitude and $49^{\circ}-18'$ north latitude.

Copper Mountain is about 4 kilometres and the Similkameen mine about 10 kilometres to the northeast.



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LOCATION MAP

SCALE: 1" = 136 MIs.

Drawn by	Date	<i>Allen</i>
Checked by	31/12/77	ALLEN GEOLOGICAL ENGINEERING LTD.
	Org no. 1	

PROPERTY

From the legal corner post, about 60 metres west of Highway #3, the Norma claim consists of 5 units south and 2 units west.

The southwest corner is on the south bank of Friday Creek, 200 metres south of Highway #3.

The metal tag number is 35043.

John Turner located the claim March 7 and 8, 1977, and recorded on March 17, 1977.

On the B.C. Ministry of Mines and Petroleum Resources Map 92H-7E, the Norma claim is designated as #207.

HISTORY

In 1952 J.W. Galagher prospected and located claims over the area. Deep Gulch Mines held the area in the late 1950's.

In 1968 Oro Mines acquired claims over the area and after some geological and geophysical work and trenching, they diamond drilled several holes.

Gilford Resources Ltd. purchased the Norma claim in the spring of 1977.

TOPOGRAPHY

Using the surveyed grid on the Norma claim, elevations were recorded at all stations, with a Terra Surveying Altimeter.

Check elevations were taken at Princeton morning and evening and at suitable locations on and near the property during the day.

The property lies between elevations 3,700 and 4,800 feet above sea level.

Friday Creek flows through a deep V-shaped valley easterly along the south boundary of the property.

Deep Gulch Creek flows intermittently in a shallow draw north-easterly across the northern section of the claim area.

There is a gently rounded easterly sloping ridge between the two creeks.

The topography is shown on Map #3 accompanying this report.

TRENCHES

Six old trenches were cleared and deepened near the south central boundary of the property. These provided bedrock information.

Trench #1, located east of the property boundary near line 6+00 south is not shown on the accompanying map as bedrock was not exposed.

Trenches 2, 3, 4, 5 and 6 exposed faulted and highly altered Nicola rocks ranging from black fine-grained andesite to silicified light grey to greenish grey rock containing clusters and disseminations of sulphide minerals.

Trench #1.

Off map, near line 6+00 South, no bedrock, 50 feet by 14 feet by 5 feet.

Trench #2.

This trench crosses the east boundary of the Norma claim, 12 metres south of line 7+50. It extends 150 feet southwest and 150 feet northeast from the line. It is 14 feet wide and averages 5 feet deep.

Heavily sheared, black, fine-grained, iron stained andesitic rock is exposed. The strongest shearing strikes north 30 degrees east and dips 65 degrees northwest. Minor quartz stringers containing pyrite are fractured and displaced.

Trench #3.

This is a small irregular excavation about 25 feet by 14 feet averaging 5 feet deep, near line 11+25 south and 2+00 west.

The exposed rock is green to light grey, silicified, fractured and pyritized. By megascopic examination it appears to be an altered andesite. There is white calcite in fractures. Two veins of fractured opaque white quartz, up to 6 inches wide, strike north 20 degrees east and dip 65 degrees northwest. There is minor pyrite in fractures and disseminations in the quartz. In the silicified wall rock there is disseminated pyrite, pyrrhotite and minor chalcopyrite.

Trench #4.

This trench, near line 11+25 south and 1+00 west, is directed northwesterly. It is 50 feet by 14 feet and a maximum of 10 feet deep.

Black, fine-grained, hard sheared and fractured rock is cut by a 5-inch quartz vein striking 150 degrees and dipping

60 degrees southwest. Fracturing is at 30 degrees and vertical and shearing is at 165 degrees and vertical.

Trench #5.

This trench is near line 11+25 south and the east boundary line. It is 100 feet long, 14 feet wide and up to 12 feet deep.

It exposes a fault zone striking north and dipping steeply west to vertical. The country rock is brown to black fine-grained andesite. There are four gouge zones a few inches to one foot wide, composed of black carbonaceous mud. One of these contains finely fractured quartz fragments. Two narrow veins of opaque white quartz strike northerly.

Trench #6.

A small trench, with total length of 30 feet, 14 feet wide and up to 10 feet deep, near the west end of Number 5 trench.

It exposes the northerly extension of the fault exposed in the #5 trench.

GRID CONTROL.

A base line was surveyed by chain and Brunton compass along the east boundary of the property. Cross lines were surveyed west to the west boundary at 150 metre intervals and stations located along each line at 100 metre intervals. Intermediate lines were run from line 15+00 south to the north boundary, and stations located at

50 metre intervals along all lines north of 15+00 south.

All lines were blazed and flagged, and stations established by flagging and/or stakes. Each station was marked with the appropriate grid location.

GEOLOGICAL SURVEY

The grid lines were traversed as were the highway and secondary roads and where necessary to observe all outcrops grid lines were crossed. Type specimens were acquired from all outcrop areas and retained for further study if required.

The specimens are classified as the Nicola group and the Princeton group of volcanic rocks, as follows:

Nicola Group, Upper Triassic

Specimen No.

- | | |
|-------|---|
| A-4: | A black, massive, compact augite andesite, weathering grey and rough surfaced. |
| 6: | Dark grey to black massive andesite. |
| 7: | Dark grey fine-grained amygdaloidal andesite with black crystals, probably augite. Amygdules light brown with greenish coating. This rock is somewhat basaltic. |
| 8& 9: | Black, fine-to coarsely- crystalline rock, thin closely spaced parallel fractures, black coarse augite, a few glassy black crystals. |
| T A2: | Very fine-grained dark brown to dark grey banded, soft to medium-hard rock. The streak is light brown. There are some glassy quartz or feldspar eroded crystals included. |

- T A3: Very fine-grained apple green to light grey, hard rock with disseminated pyrite, pyrrhotite and chalcopyrite.
- T A5: Brown to dark grey fine-grained sheared platy andesite. Fractures are iron stained.
- A-S : Opposite Similkameen mine operation, from large outcrop area on Highway #3.
Grey-green andesite, finely fractured and cut with light grey veinlets.
- A-S-1: From Highway #3 about 150 metres from 6+00 south.
Grey-green slightly schistose, soft, fractured andesite, with grey veinlets.

This rock is very similar to specimen A-S.

Princeton Group - Tertiary

- A-1: Grey-green, fine-grained, medium-soft volcanic rock. Slightly schistose. Some north-south fractures.
- A-2: Red to purple, soft, fine-grained volcanic rock, with small glassy to white phenocrysts.
- A-3: Light grey volcanic rock, with numerous needle-shaped black crystals - probably hornblende. Also lathe-shaped clear glassy crystals in a fine groundmass.
- A-5: Massive grey-green agglomerate.
- B: Same grey-green rock as specimen A-1.
- C: Same as A-3 but more brown than grey.
- D: Grey to pinkish-grey crystalline volcanic rock with black needle crystals up to 1 cm, semi-transparent glassy fractured crystals. Rough weathering and massive.
- 2: Light grey, similar to A-3, and D

- 3: Dark grey compact finely crystalline rock. Black to glassy crystals along with grey-green, brown and yellow amygdules. On weathered surface the rock is finely vesicular. It appears to be basaltic.
- 5: Compact dark grey-green fine-grained volcanic rock with scattered glassy phenocrysts.

The geology was re-checked during the course of the geochemical and geophysical surveys.

SURVEY RESULTS

The Norma property and adjoining areas were closely traversed and significant geological data acquired.

Two stratigraphic groups outcrop on the property. Each is composed of volcanic rocks. The physical characteristics are, however, such that each may be recognized by megascopic examination.

The Upper Triassic Nicola group underlies 58% and the Tertiary Princeton group 42% of the claim area.

The Nicola group is divided into two categories, namely the essentially unaltered grey and black andesitic and basaltic massive rocks, and the faulted, sheared, silicified and pyritized facies of same.

The unaltered Nicola rocks are as follows:

- Massive black augite andesite.
- Coarsely crystalline dark grey to black andesite with thin, closely spaced parallel fractures.
- Dark grey fine-grained amygdaloidal basalt and/or andesite.

The altered Nicola rocks include:

Black, fine-grained, medium hard, sheared and banded andesite. Dark brown, platy, soft, fine-grained fractured and contorted rock containing disseminated pyrite.

Very fine-grained, light to dark grey-green silicified andesite, mottled and containing disseminated pyrite, pyrrhotite, and minor chalcopyrite.

Brown and black, fine-grained, foliated, hard iron-stained rock.

Bands up to one foot of soft, black, carbonaceous fault gouge.

The Princeton group is made up of the following:

Chiefly a distinctive light grey, buff, or purple, finely crystalline volcanic rock. It contains abundant needle-shaped shiny black hornblende crystals and lesser scattered glassy lath-shaped crystals.

Grey-green, fine-grained, soft and slightly schistose andesite. Red to purple, fine-grained andesite porphyry, with white phenocrysts.

Black amygdaloidal andesite and/or basalt.

Grey-green agglomerate.

There is no structure apparent in the volcanic rock outcrops, except local shearing and faulting which is north to northeast and vertical to 60 degrees northwest.

The contact zone between the Nicola and Princeton groups is not exposed but clearly indicated as shown on the accompanying map #3.

SUMMARY AND CONCLUSIONS

The Norma property is located 15 miles south of Princeton, B.C., southwest of the Similkameen mine and the former Copper Mountain mine.

The Upper Triassic Nicola group of volcanic rocks is partially exposed over the north three-fifths of the property. Highly sheared, faulted, silicified and pyritized rocks have been exposed by trenches on the east central part of the claim area.

It is concluded that additional exploratory work should be conducted over the east-central area to delimit and assess this faulted and mineralized zone.

Respectfully submitted,

ALLEN GEOLOGICAL ENGINEERING LIMITED

Per Alfred R. Allen P.Eng.
Alfred R. Allen

Vancouver, B.C.

December 31, 1977.

REFERENCES

- Rice, H.M.A., G.S.C., Princeton Sheet, Mem. 243
- B.C. Department of Mines, M.M. Report 1959 pp. 53-54
- Maps, 888A, 889A G.S.C.
- Map, Princeton Sheet 92 H/SE, N.T.S., 1969
- Watson, R.K. and Finney, W.R.,
 Reports on the JJJ, JIII, ASH, EVA, TOW Groups,
 Oro Mines Ltd., 1968
 Assessment Report #1601
- Fraser, D.C.,
 Contouring of VLF - EM Data,
 Geophysics, Vol 34, #61, 1969, pp. 958-967

* * * * *

Allen Geological Engineering Limited

203 - 2025 Bellevue
West Vancouver, B.C. V7V 1B9

926-4785

CERTIFICATE

December 27, 1977.

I, Alfred R. Allen, certify that:

I am a graduate of the University of British Columbia
and hold the following degrees therefrom:

BASc Geological Engineering 1939

MASc Geological Engineering 1941

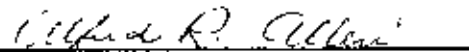
I am a member of the Association of Professional Engineers of
the Province of British Columbia.

I have practised my profession for the past thirty years.

I hold no interest in the properties or securities of Gilford
Resources Ltd., or affiliates thereof, nor do I expect to
receive any, directly or indirectly.

The accompanying report on the Norma property is based on
field work done by the writer during November - December, 1977.

I consent to this report being filed with the British Columbia
Securities Commission.



Alfred R. Allen

Allen Geological Engineering Limited

#203 - 2025 Bellevue

West Vancouver, B.C. V7V 1B9

926-4785

December 27, 1977.

British Columbia Securities Commission
756 Fort Street
Victoria, B.C.

Dear Sirs:

Re: Gilford Resources Ltd.

I hereby consent to the use of my report on the Norma property, Copper Mountain Area, Similkameen M.D., B.C., in any prospectus or Statement of Material facts or other material to be filed with the British Columbia Securities commission or the Vancouver Stock Exchange by Gilford Resources Ltd.

Yours very truly,

Alfred R. Allen P.Eng.
Alfred R. Allen

For:

ALLEN GEOLOGICAL ENGINEERING LIMITED

THE NORMA PROPERTYSIMILKAMEEN M.D. B.C.120 - 50 SEPERSONNEL AND TIME

GRID
 GEOLOGICAL SURVEY
 GEOCHEMICAL SURVEY
 MAGNETOMETER SURVEY
 ELECTROMAGNETIC SURVEY
 TRENCHING

Alfred R. Allen, P.Eng., Field

	<u>Grid,</u>	<u>Geol.</u>	<u>Geochem.,</u>	<u>Mag.</u>	<u>EM</u>	<u>Trenches</u>	<u>Man Days</u>
Nov.77	-	16-20	22&23	24&25	26	•	10
Dec.77	-	--	--	--	1,2,4,5,7	6	6

Tom Thomas and Richard Thomas, Field

Nov.77	1-9	10&11	12-18	19-24	25-30	--	60
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Alfred R. Allen, P.Eng., Reports and Maps

26

Dec.77 9-17, 19-22, 27-31

Jan.78 3-10.

GEOLOGICAL SURVEYNORMA CLAIM - #207120 - 50 SESIMILKAMEEN M.D. B.C.For: GILFORD RESOURCES LTD.

OPERATOR: Alfred R. Allen, Geological Engineer, @ \$185.00/day
 202 - 2025 Bellevue, West Vancouver, B.C.
 November 1, 1977 to January 10, 1978.

ASSISTANTS: Thomas Thomas, Experienced field man, @ \$ 99.00/day
 Richard Thomas, Field helper @ 55.00/day
 R.R. 4, Mission, B.C.
 November 1-30, 1977.

<u>SURVEY:</u>	<u>Man Days</u>	<u>Costs</u>
T. Thomas	2	\$ 198.00
R. Thomas	2	110.00
Alfred R. Allen	5	925.00

Data Processing, Mapping, Interpretation, Preparation

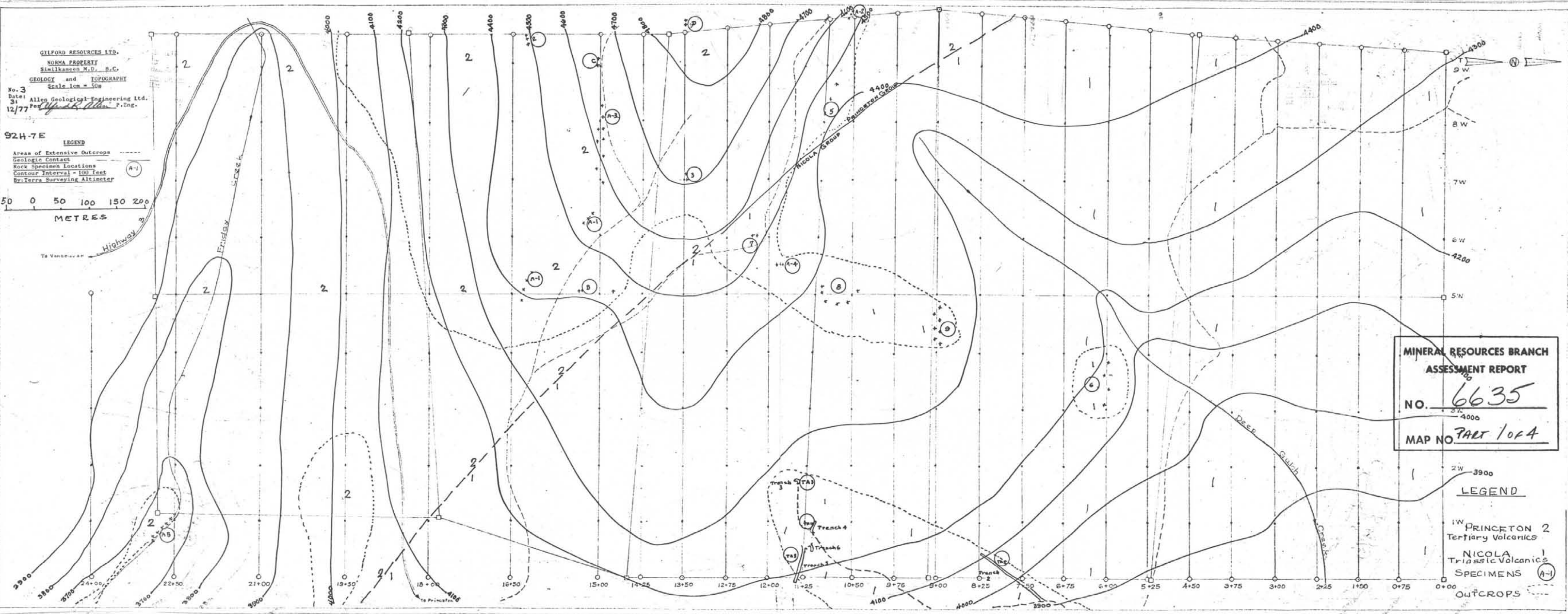
Alfred R. Allen	10	1,850.00
Transportation		100.00
Food		150.00
Supplies		30.00
Accommodation		200.00
Maps, reproductions, stenographic,		30.00
Grid (pro-rated)		140.00
Trenching, Supervision,		185.00
Trenching, Bulldozing		400.00
Total costs,		<u>\$4,318.00</u>

GILFORD RESOURCES LTD.
 NORMA PROPERTY
 Similkameen M.D., B.C.
 GEOLOGY and TOPOGRAPHY
 Scale 1cm = 50m
 No. 3
 Date: Allen Geological Engineering Ltd.
 31 12/77 Per *[Signature]* P. Eng.

92H-7E
 LEGEND
 Areas of Extensive Outcrops
 Geologic Contact
 Rock Specimen Locations
 Contour Interval - 100 feet
 By: Terra Surveying Altimeter

50 0 50 100 150 200
 METRES

To Vancouver Highway
 To Princeton



MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
 NO. 6635
 MAP NO. PART 1 of 4

LEGEND
 1W PRINCETON 2
 Tertiary Volcanics
 1
 NICOLA
 Triassic Volcanics
 SPECIMENS (A-1)
 OUTCROPS